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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2011, 28(6):851–852

Oral Medicine and Pathology Quiz – Case 19

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A 53-year-old male was referred to the Department of Oral and Maxillofacial Surgery for investigation of painful expansion of the mandible of two years duration. His medical history was non contributory. On clinical examination, a painful, hard swelling, covered by normal mucosa, was noticed in the anterior mandible (fig. 1). Computed tomography revealed a well-defined multilocular radiolucent lesion of the anterior mandible extending from the right lower canine to the left first premolar, not affecting the lower border of the mandible (fig. 2). The lesion was surgically removed and submitted for histopathologic examination, which revealed numerous epithelial islands and anastomosing cords in a mature fibrous connective tissue stroma focally invading the surrounding bone; the epithelial islands exhibited a peripheral layer of tall, columnar cells with hyperchromatic, reversely polarized nuclei (fig. 3). Foci of amorphous eosinophilic material, morphologically compatible with dentinoid, were focally noticed within the epithelial nests (fig. 4). No signs of recurrence were noticed during a 2-year follow-up period.

Comment

Ameloblastoma is a locally invasive benign jaw neoplasm of odontogenic epithelial origin. It is the second most common odontogenic tumor following odontoma. According to the latest classification of odontogenic tumors (WHO 2005), ameloblastomas are included in the group of benign tumors of odontogenic epithelium with mature, fibrous stroma without odontogenic ectomesenchyme. Ameloblastoma may originate from various sources of odontogenic epithelium, such as the enamel organ, odontogenic rests, reduced enamel epithelium and epithelial lining of odontogenic cysts. The underlying molecular alterations of odontogenic neoplasia are a subject of ongoing research.

Three distinct clinical variants of ameloblastoma have been described: (a) The conventional, solid or multicystic, ameloblastoma which accounts for over 85% of all cases, (b) the unicystic ameloblastoma (about 15% of all cases), which clinically and radiographically resembles an odontogenic cyst, and (c) the peripheral (extraosseous) ameloblastoma (1% of all cases), most often affecting the gingiva.

Conventional solid or multicystic ameloblastoma affects a wide age range with an approximately equal prevalence in the third to seventh decades of life. It occurs most often in the mandible (80–85% of cases), with a predilection for the molar-ramus area. A painless expansion of the jaw is usually noted. If left untreated, the tumor exhibits slow but relentless growth producing marked deformity.

Radiographically, the lesion usually appears as a unilocular or multilocular ("soap bubble" or "honeycombed") radiolucency with well-defined, scalloped borders. Buccal and lingual cortical bone expansion is frequently present.

Histopathologically, conventional ameloblastomas demonstrate combinations of cystic and solid features assuming various patterns. Common to all histological subtypes is the palisading arrangement of peripheral columnar ameloblast-like cells with hyperchromatic, reversely polarized nuclei. The most common patterns are the follicular, which features epithelial islands resembling enamel organ epithelium, and the plexiform, characterized by long, anastomosing cords or larger sheets of odontogenic epithelium. Less common patterns include the acanthomatous, granular cell, desmoplastic and basal cell. Ameloblastomas do not typically produce hard dental tissues, although occasional presence of dentinoid material, as seen in the present case, has been infrequently described.

Ameloblastoma is a persistent, locally infiltrative neoplasm. Most of the tumors are not life-threatening and malignant transformation or metastases are extremely rare. Nevertheless, they may be lethal if they spread to vital structures. The treatment of choice is complete surgical removal, the extent of which is decided based upon the type of the lesion (unicystic and peripheral ameloblastomas are treated less aggressively), the location and the patient's age. Conservative surgical approach is associated with a high recurrence rate (up to 50–90%), even many years postoperatively. On the other hand, marginal resection limits the recurrence rate to about 15%. The margin of the resection is generally attempted to exceed the radiographic limits of the lesion by 1–1.5 cm. Maxillary lesions are usually more problematic due to the difficulty of obtaining an adequate surgical margin, the high content of cancellous bone and the proximity to

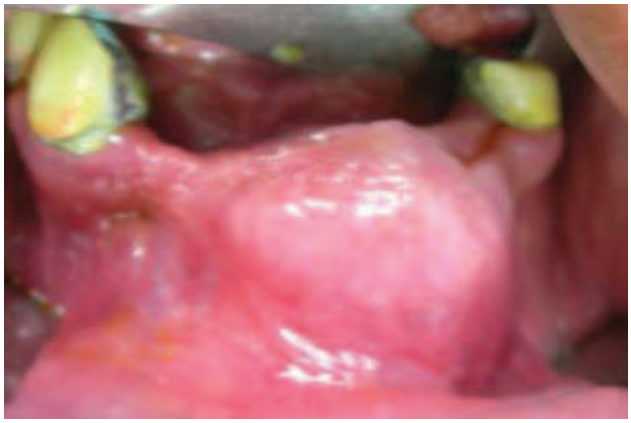

Figure 1

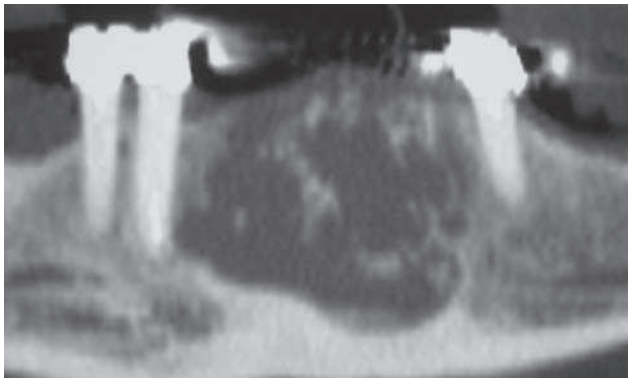

Figure 2

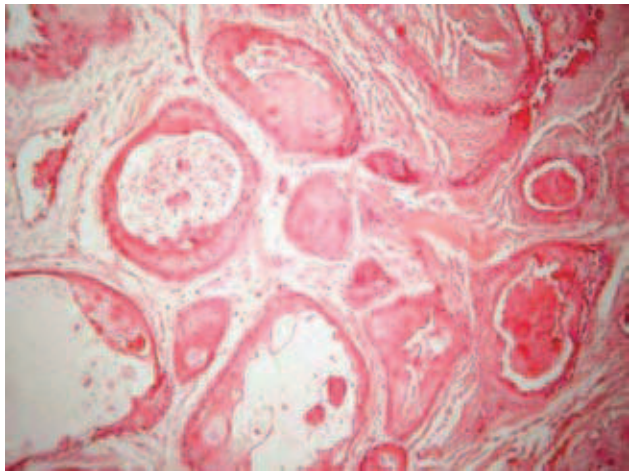

Figure 3

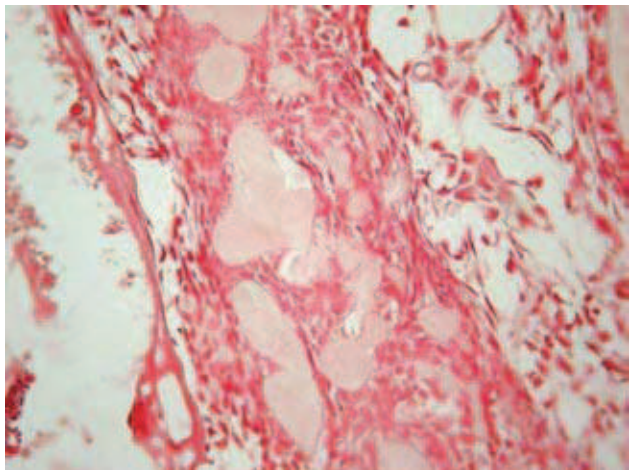

Figure 4

anatomical structures. Patients with ameloblastoma of any type should be monitored indefinitely.

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